Claims

Claims 1-29 (canceled)

30. (original) A method of applying electrical energy to a wall of a body lumen, comprising:

introducing an elongated non-conductive catheter into a body lumen;

advancing a conductive member longitudinally through the catheter until it emerges from the catheter, wherein the conductive member assumes a shape that contacts the walls of the body lumen; and

applying electrical energy to the conductive member such that the electrical energy is conducted along the conductive member to the wall of the body lumen.

31. (original) The method of claim 30, wherein the conductive member comprises a memory material that assumes a non-helical shape inside the catheter and assumes a substantially helical shape after it emerges from the catheter.

32. (original) The method of claim 31, wherein the catheter is advanced out of the catheter through a side port defined by the catheter.

33. (original) The method of claim 31, wherein the body lumen is an aneurysm lumen.

34. (original) The method of claim 31, wherein the conductive member comprises a proximal portion that is advanced through the catheter and a distal portion that expands to contact the wall of the lumen, wherein the distal portion comprises a plurality of longitudinally extending struts that are moved between a retracted position in which they slide through the catheter and an expanded position in which they contact the wall of the body lumen, the struts being moved between the retracted and expanded positions by longitudinal movement of the conductive member through the catheter.

35. (original) The method of claim 31, wherein the conductive member is a conductive liquid that is forced through fluid orifices defined by the catheter and out of the catheter into contact with the walls of the body lumen.

36. (original) A device for substantially occluding a lumen of a hollow organ of a subject, comprising:

a substantially tubular catheter comprising a nonconductive material, the catheter defining a catheter lumen in communication with both a proximal catheter opening and a distal catheter opening;

an electrode having a proximal electrode end and a distal electrode end, the electrode having a non-deployed state inside the catheter lumen in which the catheter substantially surrounds the electrode, and the electrode having a deployed state in which the distal electrode end, after being advanced through the distal catheter opening, substantially conforms to an inner surface of the hollow organ lumen; and

a source of radiofrequency energy electrically connected to the electrode and capable of delivering a therapeutically effective amount of radiofrequency energy to the electrode that is capable of substantially occluding the lumen.

37. (original) The device of claim 36, wherein the distal catheter opening comprises at least one side hole.

38. (original) The device of claim 36, wherein the distal catheter opening comprises at least one end hole.

39. (original) The device of claim 36, wherein the electrode comprises a memory material that assumes a pre-selected shape when not under constraint against assuming the pre-selected shape.

40. (original) The device of claim 36, wherein the electrode comprises an electrically conductive biocompatible liquid.

41. (currently amended) The device of claim 36, wherein the electrode comprises ~~a~~ an electrically conductive biodegradable material.

42. (original) The device of claim 36, wherein the electrode comprises an outer coating that reduces adherence of the electrode to the inner surface of the organ.

43. (original) The device of claim 36, wherein the distal electrode end is detachable from the proximal electrode end upon delivery of a therapeutically effective amount of energy to the electrode.

44. (original) The device of claim 36, wherein the electrode further comprises at least two substantially coaxial sections, each of which may be advanced, retracted, or rotated independently of the other.

45. (original) The device of claim 44, wherein the first coaxial section substantially surrounds the second coaxial section, and the second coaxial section comprises a movable core.

46. (original) The device of claim 45, wherein two or more electrodes are attached to the movable core at a distal approximation point and are attached to the first coaxial section at a proximal approximation point, the proximal approximation point being displaced proximal to the distal approximation point.

47. (original) The device of claim 44, wherein the size or shape of the electrodes is selectively adjustable by rotating the movable core relative to the first coaxial section.

48. (original) The device of claim 44, wherein the size or shape of the electrodes is selectively adjustable by advancing or retracting the movable core relative to the first coaxial section.

49. (original) The device of claim 36, further comprising a temporary lumen occluder that occludes the lumen proximal to the deployed distal electrode end.

50. (original) The device of claim 49, further comprising a second temporary lumen occluder that occludes the lumen distal to the deployed distal electrode end.

51. (original) The device of claim 36, further comprising a microprocessor that controls energy delivered to the electrode.

52. (original) The device of claim 51, further comprising a thermistor, wherein the microprocessor receives temperature information from the thermistor and, based on this temperature information, adjusts wattage, frequency, duration of energy delivery, or total energy delivered to the electrode.

53. (currently amended) A method of delivering a radiofrequency signal to a wall of a substantially hollow organ having an inner surface, an outer surface, and a lumen substantially bounded by the inner surface, comprising:

deploying in the lumen the device of claim ~~1~~ 36; and

delivering a therapeutically effective amount of electrical energy to the wall of the organ.

54. (original) The method of claim 53, wherein the method is a method of substantially occluding the lumen.

55. (original) The method of claim 53, wherein the method is a method of controlling bleeding, a method of ablating an arteriovenous malformation, a method of repairing a vascular aneurysm, a method of reducing blood supply to a tumor, or a method of ablating a varix.

56. (currently amended) A method of increasing the diameter of a lumen of a hollow organ within a subject, comprising:

deploying the device of claim ~~1~~ 36 within the lumen of the hollow organ; and

delivering a therapeutically effective amount of electrical energy to the conductive member such that the lumen diameter is increased.

57. (original) The method of claim 56, wherein the organ is an artery.

58. (original) The method of claim 57, wherein the artery has a stenosis and the method comprises a method of reducing the stenosis.

59. (previously presented) A device for delivering electrical energy to a wall of a lumen, comprising:

a non-conductive catheter sized for introduction into the lumen; and

a conductive member capable of conducting an electrical signal, wherein the conductive member has a distal end portion which is contained within the catheter, the conductive member is movable between a non-deployed position wherein said distal end portion is within the catheter and a deployed position in which the conductive member is advanced longitudinally through and out of the catheter, wherein said distal end portion of the conductive member substantially conforms to the wall of the lumen when the conductive member is in the deployed position, wherein the conductive member in the deployed position is a helix that expands to an enlarged central diameter that is greater than a proximal diameter of the helix at the catheter or a distal diameter of the helix at a distal end of the conductive member.

60. (previously presented) The device of claim 59, wherein said distal end portion of the conductive member in the non-deployed position is substantially linear and, in the deployed position, assumes a substantially helical shape.

61. (previously presented) The device of claim 60, wherein the conductive member comprises a memory material that assumes the substantially helical shape when the conductive member is advanced out of the catheter.

62. (previously presented) The device of claim 59, further comprising a source of electrical energy selectively in contact with the conductive member.

63. (previously presented) The device of claim 62, wherein the source of electrical energy is radiofrequency energy.

64. (previously presented) The device of claim 59, wherein the catheter is sized for insertion into a blood vessel.

65. (previously presented) A device for delivering electrical energy to a wall of a lumen, comprising:

a non-conductive catheter sized for introduction into the lumen; and

a conductive element capable of conducting an electrical signal, wherein the conductive element is contained within the catheter, the conductive element is movable between a non-deployed position within the catheter and a deployed position in which the conductive element is advanced longitudinally through and out of the catheter, wherein the conductive element substantially conforms to the wall of the lumen when the conductive element is in the deployed position, the conductive element comprises an electrically conductive liquid and the catheter comprises a plurality of ports arranged peripherally around the catheter near a distal end of the catheter, through which ports the liquid is deployed against the wall of the lumen.

66. (previously presented) The device of claim 65, further comprising a source of the conductive liquid in communication with the catheter and a pressure source capable of selectively moving the liquid through the catheter.

67. (New) The device of claim 36, wherein the source of radiofrequency energy is capable of providing up to about 500 watts of radiofrequency energy to the electrode.

68. (New) The device of claim 36, wherein the source of radiofrequency energy is capable of providing up to about 200 watts of radiofrequency energy to the electrode.

69. (New) The device of claim 36, wherein the source of radiofrequency energy is configured to provide between about 5 watts and about 200 watts of radiofrequency energy to the electrode.

70. (New) The device of claim 36, wherein the source of radiofrequency energy is configured to provide between about 20 watts and about 200 watts of radiofrequency energy to the electrode.

71. (New) The device of claim 36, wherein the electrode in the deployed position is a helix that expands to an enlarged central diameter that is greater than a proximal diameter of the helix at the catheter and a distal diameter of the helix at a distal end of the electrode.

72. (New) The device of claim 36, wherein the electrode comprises an electrically conductive liquid and the catheter comprises a plurality of ports arranged peripherally around the catheter near a distal end of the catheter, through which ports the liquid is deployed against the wall of the lumen.